

METHOD OF MANUFACTURE OF RAISED SOURCE DRAIN MOSFET WITH TOP NOTCHED GATE STRUCTURE FILLED WITH DIELECTRIC PLUG IN AND DEVICE MANUFACTURED THEREBY

Abstract

A method is provided for forming an SOI MOSFET device with a silicon layer formed on a dielectric layer with a gate electrode stack, with sidewall spacers on sidewalls of the gate electrode stack and raised source/drain regions formed on the surface of the silicon layer. The gate electrode stack comprises a gate electrode formed of polysilicon over a gate dielectric layer formed on the surface of the silicon layer. A plug of dielectric material is formed in a notch in a cap layer above the gate polysilicon. The sidewalls of the gate electrode is covered by the sidewall spacers which cover a portion of the plug for the purpose of eliminating the exposure of the gate polysilicon so that formation of spurious epitaxial growth during the formation of raised source/drain regions is avoided.